

**Fifth Grade
2016 Science Standards Resource Guide**

Physical Science				
2016 Indiana Academic Standards	Clarifying Statements	Vocabulary	Crosscutting Concept	Disciplinary Core Idea
5.PS.1 Describe and measure the volume and mass of a sample of a given material.		-Volume -Mass -Kilograms -Grams -Balance	Energy and Matter Structure and Function	PS1.A: Structure and Properties of Matter
5.PS.2 Demonstrate that regardless of how parts of an object are assembled the mass of the whole object is identical to the sum of the mass of the parts; however, the volume can differ from the sum of the volumes. (Law of Conservation of Mass)		-Mass	Energy and Matter Structure and Function	PS1.A: Structure and Properties of Matter
5.PS.3 Determine if matter has been added or lost by comparing mass when melting, freezing, or dissolving a sample of a substance. (Law of Conservation of Mass)		-Conservation -Mass	Cause and Effect Energy and Matter Structure and Function	PS1.A: Structure and Properties of Matter

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5.PS.4 Describe the difference between weight being dependent on gravity and mass comprised of the amount of matter in a given substance or material.		-Weight -Scale -Mass -Balance -Gravity	Energy and Matter Structure and Function	PS1.A: Structure and Properties of Matter
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Earth and Space Science				
2016 Indiana Academic Standards	Clarifying Statements	Vocabulary	Crosscutting Concepts	Disciplinary Core Idea
5.ESS.1 Analyze the scale of our solar system and its components: our solar system includes the sun, moon, seven other planets and their moons, and many other objects like asteroids and comets.		-Mercury -Venus -Earth -Mars -Jupiter -Saturn -Uranus -Neptune	Scale, Proportion, and Quantity Systems and System Models	ESS1.A: The Universe and Its Stars ESS1.B: Earth and the Solar System
5.ESS.2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.		-Constellations	Patterns Stability and Change	ESS1.A: The Universe and Its Stars ESS1.B: Earth and the Solar System

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5.ESS.3 Investigate ways individual communities within the United States protect the Earth's resources and environment.		-Renewable Resource -Nonrenewable Resource		ESS2. A: Earth's Materials and Systems ESS3.A: Natural Resources ESS3.C: Human Impacts on Earth Systems
5.ESS.4 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.		-Geosphere -Biosphere -Hydrosphere -Atmosphere	Systems and System Models	ESS2.B: Plate Tectonics and Large-Scale System Interactions

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Life Science				
2016 Indiana Academic Standards	Clarifying Statements	Vocabulary	Crosscutting Concepts	Disciplinary Core Ideas
5.LS.1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.		-Decomposer	Patterns Cause and Effect	LS1.C: Organization for Matter and Energy Flow in Organisms
5.LS.2 Observe and classify common Indiana organisms as producers, consumers, decomposers, or predator and prey based on their relationships and interactions with other organisms in their ecosystem.		-Producer -Consumer -Decomposer -Predator -Prey		LS2.A: Interdependent Relationships in Ecosystems LS2.C: Ecosystem Dynamics, Functioning, and Resilience
5.LS.3 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.			Systems and System Models Structure and Function	LS1.D: Information Processing

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Engineering				
2016 Indiana Academic Standards	Clarifying Statements	Vocabulary	Crosscutting Concepts	Disciplinary Core Ideas
3-5.E.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.			Scale, Proportion, and Quantity Systems and System Models	ETS1.A: Defining and Delimiting an Engineering Problem
3-5.E.2 Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.				ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution
3-5.E.3 Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.			Systems and System Models	